

# CHAPTER 3

## TRANSPORTATION ELEMENT

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### ***INTRODUCTION***

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The *Transportation Element* must balance the needs of businesses, neighborhoods, schools, freight, industry, retailers, property owners, parks, subdivisions, airports, rural centers, and the environment. No single sector of the community dominates the entire transportation plan; however, each sector of the community can profit by achieving a balanced transportation system.

Policies of the *Transportation Element* are intended to:

- improve mobility with a focus on persons instead of automobiles;
- limit roadway widening (especially in neighborhoods that are bisected by the arterial network);
- improve the pedestrian and bicycle network; and,
- encourage development of neighborhood traffic management programs.

By law, the *Transportation Element* must implement and be constant with other elements of the *20-Year Plan*. The policies and LOS standards contained within this element complement the *Land Use Element* by providing for transportation needs and infrastructure in urban centers, addressing the needs of neighborhoods and adapting the rural transportation system in support of those policies. This Element also integrates the goals and directions of the *Housing (Chapter 5)* and *Economic Development (Chapter 7) Elements* as well as minimizing the environmental impact of the transportation systems.

### ***LOS REQUIREMENTS***

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The State of Washington's *1990 Growth Management Act (GMA)* mandates the inclusion of a *Transportation Element* in the *Comprehensive Plan*. Although the *GMA* has

some very specific requirements, flexibility is written into the law so that each county can tailor its plan to its community goals. Key aspects of the *GMA* regarding transportation elements include:

- consideration of many types of transportation (air, water, rail, and land--including roadways, transit, ferries, non-motorized, and freight);
- recognition of RCW 47.06.140 which defines transportation features and services of statewide significance, and with the state-adopted levels of service on roadway facilities—level of service C in rural areas and D, mitigated, for urban areas.
- recognition and inclusion of highways of regional significance with a regionally designated level of service.
- adoption of LOS standards for both arterials and transit routes (*see LOS section*);
- flexibility in establishing levels of service to address desired land use goals;
- consistency with county wide and regional transportation plans is required;
- provision of adequate transportation service concurrent with (or within six years of) development; and,
- internal consistency of all elements in the *Comprehensive Plan*, and particularly the *Land Use* and *Transportation Elements*.

### ***PROCESS***

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The *Transportation Element* was developed from a number of cooperative transportation planning efforts in the county. The *Clark County Resource Document, 1992*, provides the

existing conditions inventory. The *Community Framework Plan* provides countywide transportation policies to guide the county and its municipalities with the development of their comprehensive plans and transportation elements. The *Regional Transportation Plan for Clark County (Interim Update), 1993*, prepared by the Regional Transportation Council (RTC) provides the regional framework consistent with transportation planning in the Portland metropolitan region. RTC conducts transportation modeling for Clark County. The State Highway System Plan provides guidance on the planned improvements and funding available for those identified. Policies from other planning documents such as the *Clark County Trails & Bikeway System Plan*, December 1992, have been incorporated into this element. In addition, Clark County worked with each city in a partnership planning process to develop a coordinated transportation and land use plan for each urban area.

The process of forming this element was as follows:

- Determine existing deficiencies and their cost. The county is required to correct these problems. Once corrected, future problems will be primarily the responsibility of the development that causes them.
- Determine the community's vision of the desired transportation system. An extensive process of open houses, surveys, public forums, etc., was used to define the community's vision.
- Set LOS standards to implement the vision.
- Use proposed land use patterns to forecast future travel demand.
- Identify future projects needed to maintain adopted levels of service.
- Determine if the county can afford the projects through grants, traffic impact fees, etc. If not, revert to step 3 and revise LOS standards.

The *Transportation Element* consists of the following sections:

### ***Modes of Travel***

- Roads, transit, bicycling, aviation, etc.

- Existing Conditions
- Future Conditions
- Implementation and Financing Strategies

The final section outlines how this element will be implemented once adopted. Most importantly, a system for ensuring concurrency must be adopted and maintained.

### ***Level of Service***

Level of Service (LOS) standards for arterials set goals for the maximum amount of congestion tolerated on the roadway. For transit routes, the LOS thresholds establish service performance goals in terms of frequency and coverage. LOS standards are used to identify existing and future deficiencies.

### ***Concurrency***

This section outlines the process that the county will use to ensure sufficient infrastructure is in place within six years of development as required by the *GMA*.

### ***Policies***

A comprehensive set of policies to guide the implementation of this element is defined in this section.

### ***Financial Analysis***

A multi-year analysis of funding capability balancing the needs identified in this chapter against probable resources.

## ***ROADS***

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The *GMA* requires an inventory of existing conditions for specific modes of transportation (*Figure 16*). The complete inventory of the roadway system, transit system, rail facilities, airports, port districts, and the bicycle and pedestrian system is contained in the *Clark County Perspectives Resource Document*. This section summarizes those studies. LOS standards and concurrency are addressed separately. The supporting document lists numerous existing and future roadway capacity deficiencies.

## Functional Classification

Highways, roads, and streets are classified into groups having similar characteristics for providing mobility and/or access. The functional classification also dictates the design standards of roadways. *Table 3.1* illustrates a comparative inventory of the mileage for each classified roadway type per area and its proportional share of the entire roadway system in Clark County.

- The County's arterial functional classification, the expected 20-year

roadway cross-sections and the applicable level of service standard for each roadway in the County's jurisdiction is provided in the *1995 Arterial Atlas and Concurrency Management System*. The information provided in that document for the County arterial roadways represents the County's adopted policy with respect to how the individual roadways are classified into the system described in this section of the *Comprehensive Plan*.

**Table 3.1 Federal Functional Classification of Mileage of Clark County's Classified and Local Roads**

FACILITY TYPE	VANCOUVER URBAN AREA	CAMAS URBAN AREA	RURAL REMAINDER OF COUNTY	TOTAL CLARK COUNTY	PERCENT OF TOTAL
INTERSTATES	18.8	0.0	12.5	31.4	1.8
EXPRESSWAYS & PRINCIPALS	69.9	11.5	18.3	99.8	5.7
MINOR ARTERIALS	89.6	21.2	19.7	130.6	7.4
URBAN COLLECTORS & RURAL MAJOR COLLECTORS	124.6	14.0	203.4	341.9	19.4
RURAL MINOR COLLECTORS	0.0	0.0	142.9	142.9	8.1
LOCAL ROADS	625.8	69.9	322.2	1017.9	57.7
TOTAL	928.7	116.6	719.0	1,764.3	100.0

*Note: does not include future proposed roads*

- **Interstate Routes:** Interstate routes (such as I-5 and I-205) are designed to provide for the highest degree of mobility serving large volumes of long-distance traffic; they are not designed to provide access to land uses.
- **State Routes:** State routes (such as SR-14) serve large volumes of traffic between counties or regions.
- **Urban Principal Arterials:** Urban principal arterials (such as NE 78th Street or NE Fourth Plain Road) permit traffic flow through the urban area and between major elements of the urban area. They are of great importance in the regional transportation system as they connect major traffic generators to other major activity centers and carry a high proportion of the total urban area travel on a minimum of roadway mileage.
- **Urban Minor Arterials:** Urban minor arterials (such as Hazel Dell Avenue) collect and distribute traffic from principal arterials to streets of lower classifications or allow for traffic to directly access destinations. Access to land use activities is generally permitted.
- **Urban Collectors:** Urban collectors (such as NE Burton Road or NE 28th Street) provide for land access and traffic circulation within and between residential neighborhoods and commercial and industrial areas. Collectors do not handle long through trips and are not continuous for any great length.
- **Urban Local Streets:** Urban local streets emphasize access to land uses versus mobility and usually contain no bus routes.

- **Rural Principal Arterials:** Rural principal arterials connect rural communities to each other and to urban areas. Most are roadways in the National Highway System.
- **Rural Minor Arterials:** In conjunction with rural principal arterials, the rural minor arterials (such as SR-503 above Battle Ground) form a rural network that links cities and larger towns together with other major traffic generators. Minor arterials should be expected to provide for relatively high overall travel speeds with minimum interference to through movement. All rural minor arterials are within the State System.
- **Rural Major Collectors:** Rural major collectors (72nd Avenue from 119th Street north) are extensions of urban principal arterials and some urban minor arterials into rural areas.
- **Rural Minor Collectors:** Rural minor collectors (NE Kelly Road) are rural extensions of urban collectors and some urban minor arterials.

## ***EXISTING TRAFFIC VOLUMES***

Clark County has seen significant growth in traffic volumes in recent years as a result of socio-economic and demographic changes. Congestion at most Clark County intersections reflects the increases in traffic volumes on the roadway segments. Intersections that experience the highest traffic are (in descending order of traffic volume):

- Mill Plain Boulevard and Chkalov Drive
- SR-500 and NE 112th Avenue
- SR-500 and Andresen Road
- Highway 99 and NE 78th Street

## ***EXISTING DEFICIENCIES***

Some roadways and intersections do not meet the proposed LOS standards contained in this element. The county is committed to correcting these deficiencies as quickly as possible, and at least within six years.

Existing deficiencies are found predominantly on the major state highways in the Vancouver

urban area on the following existing roadways: SR-500 and NE Fourth Plain Road in the vicinity of the Vancouver Mall and I-205; on East Mill Plain Boulevard near I-205; and on segments of NE Andresen Road north of SR-500. The I-5 crossing over the Columbia River is currently operating at LOS D. The LOS standards will allow for a 15 percent increase in V/C for the I-5 bridge, to allow for continued development in Clark County. The ratio of volume to capacity is referred to as the V/C ratio. In the future, alternative modes of transportation, such as transit, HOV, or high-capacity transit (HCT) may be needed to improve the carrying capacity of the I-5 bridge without expanding or replacing it (*Figure 17*).

## ***Signalized Intersections***

Several key intersections experienced poor levels of service in 1990, particularly during the peak afternoon period when commute trips are joined by shopping, school, and other non-commute trips. There are several signalized intersections in Clark County that operate at or near deficient levels of service. These intersections are included in the county's traffic impact fee (TIF) program which is designed to ensure that new development does not cause an intersection to exceed LOS standards or aggravate existing traffic problems.

## ***TRAVEL DEMAND FORECASTING***

The Regional Transportation Council (RTC) used a computerized model based on the proposed land use patterns to project future traffic volumes. The study year for analysis of future conditions is 2020. Base conditions for the 2020 analysis scenario consist of funded or committed transportation projects, and 2020 population and employment forecasts. The programmed projects are coded into the transportation network and establish a no-action scenario for the future transportation conditions.

Travel demand has also grown as the number of registered passenger cars in Clark County has increased dramatically over the last three decades. Between 1960 and 1990 there was a 154 percent increase in population in Clark County while during the same time there was a 273 percent increase in registered passenger cars.

## ***FUTURE DEFICIENCIES***

Using capacity analysis and LOS standards (see section on LOS), RTC, Clark County and municipal staffs have identified future deficiencies of the regional transportation system based on the urban growth concept and an assumed roadway network for 2013. The assumed network is the existing network with improvements programmed in the transportation improvement programs of the various jurisdictions and projects for which there is an identified regional need, strong regional commitment, and probable funding available. The 6-year *Road Plan* is updated and adopted on an annual basis (Figure 18).

## ***AIR QUALITY***

Clark County is located in an airshed that is bounded on the south by Eugene, Oregon, on the north by Chehalis, Washington, on the west by the Coast Range, and on the east by the Cascade Mountains. The area experiences wet, mild winters and warm, dry summers. This region is susceptible to concentrations of air pollution near human activity centers. The Columbia River divides the airshed when climactic conditions create strong east winds through the Columbia River Gorge, but Clark County air quality is frequently influenced by Portland's activities.

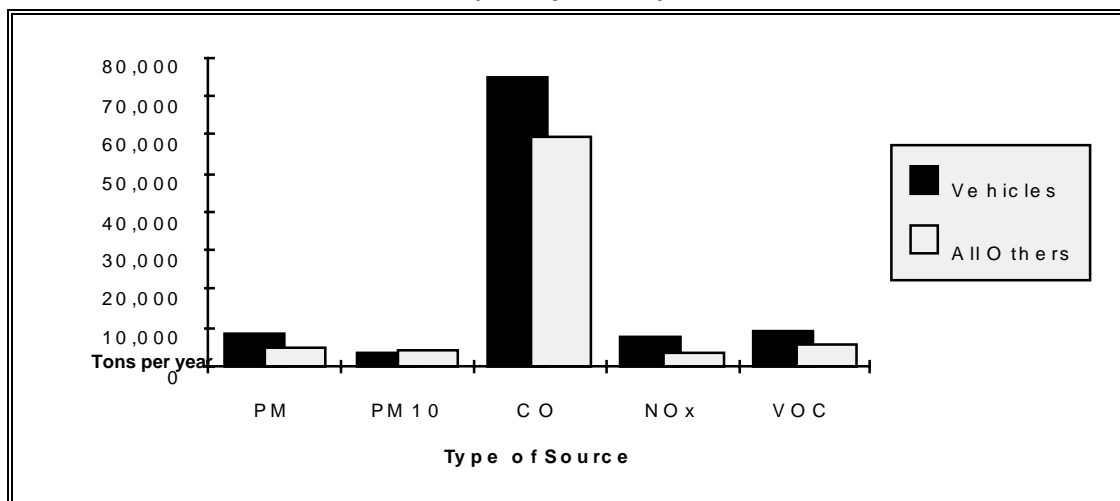
This area has exceeded federally defined threshold pollution levels more frequently than

allowed by federal air quality standards (i.e., more than once per year). On March 15, 1991, the Governor of Washington designated the urban area of the Vancouver portion of the Portland-Vancouver Interstate Air Quality Maintenance Area as a non-attainment area for ozone (O<sub>3</sub>) and carbon monoxide (CO).

Air pollutants come from a wide variety of sources. Pollutants are often placed into specific source categories: point sources, area sources, and mobile sources. Point source pollutants are traditionally stationary facilities like rock quarries, lumber mills, and other manufacturing plants and processes. Point sources emit relatively large volumes of air pollutants from a single location. Area sources, such as dry cleaning chemicals, commercial or industrial solvents, and wood stoves or fireplace emissions, come from relatively small, individual sources of pollution, which are usually spread over a broad geographic area. Area sources collectively contribute significant levels of emissions.

Mobile sources include such things as trucks, cars, and other vehicles. In the United States, transportation-generated pollutants produce half of the ground-level ozone and are also responsible for 70 to 90 percent of the national carbon monoxide problem. In addition, mobile sources emit significant quantities of nitrogen oxide (NO<sub>x</sub>), fine particulate matter, and other toxic compounds. Motor vehicles are Clark County's largest producer of air pollution as shown in Table 3.2.

**Table 3.2 1992 Clark County Total Emissions  
(Tons per Year)**



To change its status from non-attainment area to attainment area, a jurisdiction must develop a maintenance plan and submit it to the US Environmental Protection Agency (EPA). The EPA considers the plan and decides whether or not to grant the change in status. A maintenance plan is a 10-year plan for the implementation of transportation and other control strategies to ensure that National Ambient Air Quality Standards (NAAQS), once they can be attained for the region, can be maintained for a period of ten years. The air quality implementation plan currently in effect is the *1992 State Implementation Plan (SIP)* for Washington State. Southwest Washington Air Pollution Control Authority (SWAPCA) is currently working on an *Air Quality Maintenance Plan*. RTC has assisted in the development of the transportation element of the *SIP*. SWAPCA and RTC have indicated that there is not enough information on current pollutants and pollution sources to make accurate projections on growth impacts. SWAPCA intends to submit its CO and ozone maintenance plan by May 1995. The maintenance plan, with the identification and implementation of transportation control measures based on the land use assumptions of the comprehensive plans, must demonstrate that there are no violations of the NAAQS. The actual development of a maintenance plan for the land use alternative will occur after a specific alternative has been selected.

Within the non-attainment area, state and federal regulations require limitations on open burning of brush and using wood stoves or fireplaces for heating. Where wood stoves and fireplaces are permitted, they must be fitted with filters to reduce emissions. Also, all vehicles are subject to regular maintenance inspections, and special fuels will be sold in winter months. These mitigation measures have reduced pollution levels below federal thresholds for the past 18 months.

Also under existing air quality regulations, new industry locating in the county is required to use the best available control technology to reduce its own emissions.

## ***TRANSIT***

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C-TRAN is a publicly funded transportation system that serves all of Clark County with connections to Portland, Oregon. C-TRAN's existing transit facilities fall into one of two general categories: current services, and

capital facilities and resources. Current services are discussed below.

### ***Fixed Route Services***

As of October 1993, C-TRAN operated a total of 101 vehicles on its rural, urban, and commuter routes as well as on its vanpool program. Twenty of the vehicles are accessible for persons with disabilities. C-TRAN provides fixed-route service on 14 urban routes, including two free shuttles, and seven rural routes. The total route mileage is 609 miles. Service hours are from 5:00 AM to 10:45 PM on weekdays, 7:15 AM to 10:15 PM on Saturdays, and 8:15 AM to 7:15 PM on Sundays and holidays. As part of its commuter services, C-TRAN also connects directly to Tri-Met's downtown Portland transit mall and the MAX light rail system at the Gateway Transit Center. These access points allow C-TRAN passengers to reach destinations in the Portland metropolitan area, including Portland International Airport. During the last 10 years, C-TRAN ridership has tripled as new service has been implemented and additional demand has been placed on the system. Based on C-TRAN's *Fixed-Route Accessibility Transition Plan*, adopted in 1991, all fixed-route transit will be accessible to persons with disabilities by the year 1999. C-TRAN has begun to implement the plan with the procurement of 20 lift equipped buses in late 1990 and has already made 33 percent (9 routes) of its routes accessible.

### ***Miscellaneous Services***

In addition to traditional fixed routes, C-TRAN also provides a variety of other services to the community:

- **Paratransit:** C-TRAN's paratransit service plan is described in their publication *1993 C-TRAN ADA (Americans with Disabilities Act) Paratransit Service Plan*. C-VAN provides wheelchair accessible, curb-to-curb services for elderly and disabled persons who cannot use fixed-route services. For C-VAN, a total of 13 vehicles were in operation.
- **Vanpools:** C-TRAN operates a fleet of seven vans to provide another commute alternative to persons living or working in Clark County.

- **Transit Centers and Park-and-Ride Facilities:** C-TRAN operates three transit centers: Vancouver Mall, C-TRAN's main transit center located on Seventh Street in downtown Vancouver, and Evergreen Transit Center. C-TRAN also operates seven park-and-ride lots providing direct access to express commuter services and local routes. C-TRAN's facilities include transit centers, and park-and-ride lots, and indicates the average parking demand at those lots.
- **Commute Trip Reduction (CTR):** In cooperation with local jurisdictions, C-TRAN is providing a variety of support services to local employers required to meet legislated Commute Trip Reduction goals.
- **Ridematching:** C-TRAN currently assists Tri-Met in providing free ridematching services for individuals living or working in Clark County. C-TRAN is currently establishing the county's own ridematching program under the CTR Program.

### ***Future Conditions***

C-TRAN has been an active participant in the implementation of the *GMA*. C-TRAN, in cooperation with Clark County and the City of Vancouver, has been involved in the planning and identification of capital facilities improvements for the development of a 20-year, a 6-year, and a 1-year *Transportation Plan*. The information provided will be route-specific and will identify funding strategies. This information will be based on the preferred *Growth Management Plan* for the Vancouver Urban Area.

Based on the foregoing, C-TRAN has evaluated its information for consistency and compatibility with the preferred land use plan. Clark County and the City of Vancouver will identify and implement, as part of their transportation impact fee program, transportation improvements that will facilitate expanded transit service (e.g., transit centers, bus turnouts, etc.). Clark County, the City of Vancouver, and C-TRAN will enter into a planning agreement that will include, among other things, density thresholds or other standards that will trigger internal C-TRAN review of transit route service, so that transit service is available concurrent with supporting

development. As part of the *GMA* implementation, a joint development review process will institutionalize C-TRAN's participation in the development review process for SEPA, land use, zoning, development permitting, and site plan review. It is contemplated that the program will apply to transportation corridors, major centers, secondary centers and other significant transportation linkages.

It is anticipated that annual fixed route service hours will increase by 43,320 to a total of 230,807 by 1999 as reflected in C-TRAN's *1994-1999 Transit Development Plan (TDP)*. Based on Clark County's *20-Year Plan* and other related service demand factors, several changes will be implemented to C-TRAN's fixed route service during the next six years. These changes reflect the following goals:

- Major expansion of service hours that will allow C-TRAN to meet future mobility needs of persons with disabilities. The expansion is based on the *1993 C-TRAN Paratransit Plan*.
- Major expansion of the rideshare program and related administrative resources to support local ridesharing efforts, particularly those relating to commute trip reduction efforts on the part of major employers in Clark County.
- Expansion of service to meet growth in the local travel market while at the same time, addressing expected increases in congestion along major roadways.

An increase in service hours from 1994 levels will be implemented to improve frequency and add service to existing routes. In addition, two future park and ride facilities, Fisher's Landing and Central County, will offer new express service to Portland and local feeder service within Clark County.

C-TRAN's 20-year service plan identifies many strategies to achieve a successful mix of transit service. Issues of service area, route frequency, transfer ease, span of service, directness, and capacity are all addressed in the C-TRAN plan. Their plan integrates growth management planning efforts which are supportive of multi-modal transportation. Transit service, as projected in the comprehensive plan, will provide a significant presence in the region and focuses on the

expectation of a high capacity transit corridor. Service options defined in the 20-year window are not constrained financially, but respond to the anticipated demand from the community as modeled under Clark County's *Comprehensive Plan*.

The recommended LOS indicators are shown in *Table 3.3*.

### ***HIGH CAPACITY TRANSIT (HCT)***

Currently, the county, C-TRAN, and other local jurisdictions are involved along with Tri-Met and Metro from Oregon, in a high capacity transit study to determine what HCT systems are needed to: (1) adequately address expected future travel demand in the Clark County-Portland region, (2) identify land use scenarios supportive of high capacity transit systems, and (3) determine the potential for coordination of services within the Vancouver-Portland region.



**Table 3.3 C-TRAN LOS Indicators**

SERVICE CLASSIFICATION	PLANNING INDICATORS							SUPPORTING FACTORS	
	PERSONS PER SQUARE MILE (POP. + EMP.)	PEAK/ NON-PEAK HEADWAYS	BUS STOP SPACING	ACCESSIBILITY <sup>1</sup>	LOAD FACTOR	TRAVEL TIME RATIO (TRANSIT/AUTO)	SERVICE SPAN (HOURS/DAY, DAYS/WEEK)	EXPECTED MARKET CHARACTERISTICS	OTHER SUPPORTING CHARACTERISTICS
COMMUTER: INTER-STATE	20,000 - 25,000	15/NA	Major P&R lots	Within 5 miles of 80% of pop+emp	1.0	1.75	M-F, peak	Portland employees who live in Washington	Parking mgmt.; HOV priority treatments; P&R spaces
COMMUTER: INTRA-STATE	20,000 - 25,000	15/NA	Major P&R lots	Within 3 miles of 80% of pop+emp	1.0	1.75	M-F, peak	CBD & urban growth centers; employees who live in Washington suburbs	Parking mgmt.; HOV priority treatments; large number of P&R spaces
URBAN CORRIDOR SERVICE	18,000 - 20,000	15/30	1/8 mile	Within 1/4 mile of 75% of rural pop+emp	1.5	2.0	7 days, 12-16 hours/day	Income, special generators, age, high density residential development	Land use zoning compatibility; parking mgmt.
URBAN RESIDENTIAL CONNECTOR SERVICE	12,000 - 18,000	30/60	1/4 mile	Within 1/4 mile of 80% of pop+emp	1.5	2.0	5 days, 12-16 hours/day; limited weekend and evening service	Residential development connecting to major activity centers	Parking mgmt.; zoning; land use compatibility
RURAL	Policy coverage	60/120	Designated pick-up locations	Within 5 miles of 75% of rural pop+emp	1.0	2.0-3.0	M-F, 10-12 hours/day; limited weekend service	Community centers, city halls, post offices	Citizen requests for service
SUBSCRIPTION BUS	30	As needed	NA	NA	1.0	1.15	M-F, peak	Specialized employer needs	Commute trip reduction; parking mgmt.
VANPOOL	8-15	As needed	NA	NA	1.0	1.15	M-F, peak	Specialized employer needs	Commute trip reduction; parking mgmt.
C-VAN (DISABLED)	Policy	As needed	NA	NA	1.0	NA	7 days, 12-16 hours/day	Elderly and handicapped	NA

<sup>1</sup> Accessibility is defined as the percentage of households within walking distance of a transit stop, transit center, or park-and-ride lot.

NA = not available

P&R = park-and-ride

A proposed light rail transit (LRT) system is identified as the high capacity transit mode of choice even though the HCT mode decision will be made at the end of the *Tier I, South/ North Alternatives Analysis Study*.

Light rail is chosen as the preferred mode for several reasons:

- It promotes desired land use patterns and development through its support of activity centers and bi-state policies;
- it provides high quality transit service, effective transit system operation, and future expansion capability; and,
- it provides for a fiscally stable and efficient transit system and maximizes efficiency and environmental sensitivity.

Light rail transit provides high quality transit service through ease of access, transferability, fast travel times, good reliability, and high ridership. Improved bus feeder service coordinated with transit centers would simplify and centralize transfers providing for accessibility throughout the transit system. Transfers from bus routes could be easily accommodated at station locations.

This study is giving local jurisdictions a unique opportunity to gain a thorough understanding of the region's future transit development capacity and to actively assist in guiding it toward a future that will be more compatible with the public transit needs than the present situation. The county is anticipating that a light rail system will be built along the I-5 and/or SR-500 corridor(s). A final decision on the HCT mode of choice will occur in the future.

Vancouver urban area, to identify pedestrian barriers to transit routes. Barriers identified included transit routes without sidewalks or walkways, lack of street lighting, and physical barriers such as walled communities with fences that require excessive walking distances to transit routes. (The standard acceptable walking distance to a transit stop is 1/4 mile.) Topographic barriers are also included, such as steep slopes and creeks. The *Transit Access Improvement Plan* will be used to set priorities for sidewalk and walkway improvements that will enhance transit accessibility.

Light rail service in Clark County would provide more convenient, reliable service for people traveling inside Clark County as well as those traveling to destinations in Oregon. C-TRAN buses would provide access to this regional HCT system. Transit centers would be located to make reaching the high capacity transit system easy for pedestrians, bicyclists, bus riders, and automobile drivers/passengers. These transit centers would serve as intermodal facilities, allowing people to make connections between different modes of transportation.

The current phase of study leading to decisions regarding HCT in Clark County is the *South/North Transit Corridor Alternatives Analysis Study*. The purpose of the study is to develop and evaluate a variety of transit alternatives (e.g., light rail, commuter rail, busway, river transit, expanded transit service, and maintenance of current transit service levels) and to select a Locally Preferred Alternative (LPA) from among those alternatives. Construction of a light rail line, if that is the preferred alternative, would not occur until the turn of the century. C-TRAN, as lead agency in Washington State, is analyzing the environmental impacts of the alternatives.

Many of the policies contained in this *Transportation Element* are necessary for successful HCT implementation, but they are not reliant upon an HCT system being constructed.

A combined planning effort for pedestrians and transit is the *Clark County Transit Access Improvement Plan*. In the fall of 1993, data were collected along all transit routes in the

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## ***HIGH SPEED RAIL***

In 1991, the Washington State Legislature directed that an assessment of high speed ground transportation be conducted due to the increasing congestion along major transportation corridors serving intercity routes. High speed rail systems, using a variety of technologies, are in service in Japan, France, Germany and Sweden and appear well used. There are no high speed rail systems currently operating in the United States.

The study was not meant to focus on the technologies but rather on the economic, environmental, institutional and financial

feasibility of implementation. Two major corridors were identified and analyzed: a north-south route serving Portland, Oregon through Seattle to Vancouver, BC, and an east-west route serving Seatac through Moses Lake to Spokane. Preliminary findings indicated that as much as ten percent of all vehicular and air travel between Seattle and Portland might be captured by a high speed system.

The study recommended implementing high speed rail in three stages:

1. Incrementally construct and modify a system between Everett and Portland, Oregon with a 150 mph or greater top speed by the year 2020.
2. Construct a system between Everett and Vancouver, BC.
3. Construct a system between King County and Spokane.

If such a system were constructed, it would directly impact Clark County. Implementation of a true high speed rail system would require total separation from existing freight rail, elimination of at-grade crossings, acquiring new rights-of-way, and ensuring the potential for electrification of the system.

## ***FREIGHT***

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While freight is essential to the continued operation of our society, its by-products of increased truck traffic, noise, vibration, pollution, etc., often conflict with residential quality of life.

### ***Truck Movement***

RTC completed a freight mobility study, the *Southwest Washington Regional Freight Transportation Study*, in September 1993. The report reviewed freight transportation issues and needs, evaluated freight transportation movement in the region, and compiled available data on freight transportation. A summary of the existing conditions is described below.

Clark County has designated all roadways classified as arterials or above and located within urban areas as truck routes. In rural areas, the County has designated all of its collector facilities and above as truck routes. The County has placed restrictions on selected sections of the County system where pavement conditions require weight limits. The inventory

of restricted sections is updated annually, and restrictions are removed from the list once the surface has been upgraded. Washington State Department of Transportation (WSDOT) has designated all of its state roadways as truck routes and has few weight or height restrictions on these facilities.

Truck traffic within the urban area of Clark County is generally related to four activities:

- commercial and industrial site deliveries;
- solid waste disposal;
- resource extraction industries (rock quarrying and logging); and
- construction activity.

Most of the freight truck activity occurs between 6:00 AM and 4:00 PM with the highest truck traffic volumes found near midday. During the morning peak traffic period (AM peak) trucks account for approximately 5 to 10 percent of the total traffic volume on primary truck routes. During the evening peak traffic period (PM peak) the volume of truck traffic generally decreases and accounts for less than 5 percent of the total traffic.

### ***Future Conditions***

An adequate level of mobility should be maintained for goods movement in Clark County and the Vancouver-Portland metropolitan area as a whole to sustain the economic activity of the region. As traffic congestion continues to increase in more locations and for longer periods, the freight industry will experience longer shipping schedules and delays. This will likely increase the cost of transporting the goods. Of particular concern is the I-5 bridge over the Columbia River, which is already operating at capacity. The budget constraints at the federal, state, and local levels of government will limit the amount of funding for roadway improvements including those for upgrading pavement conditions on restricted truck routes. This will place more burden on the remaining truck route system.

There are measures that can be implemented for short and long-term planning for preserving an adequate level of freight mobility as identified in the RTC freight transportation study. The county has identified a preliminary list of corridors that would give high priority to freight movement.

## ***RAIL***

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Rail service in Clark County is supplied by Burlington Northern, AMTRAK, Union Pacific Railroad, and Lewis and Clark Railway. These railroad companies provide both passenger and freight services.

**Burlington Northern Railroad (BN)** operates freight service 365 days a year throughout Clark County. All BN trains in Clark County are dispatched from Seattle. BN maintains and operates the Vancouver railyard, which serves as the primary classification yard for the Portland-Vancouver metropolitan area. This facility contains 35 miles of track with a holding capacity of 1,500 rail cars. Overflow from BN tracks can be accommodated by the Port of Vancouver, which maintains supplementary holding tracks.

The BN Seattle/Vancouver line has two tracks, both in excellent condition, with 50 to 60 trains operating in the corridor each day. The Vancouver/Eastern Washington line also has two tracks in excellent condition with about 43 trains operating on them daily. The Rye Branch is a short segment that diverges from the main northern line around NW 78th Street to Rye yard off St. John's Road. The track is in fair condition and BN operates freight trains twice weekly.

The overall condition of BN's Clark County track is excellent. The speed limits on the BN mainline are not due to poor track conditions but to at-grade crossings with arterial streets.

The **Lewis and Clark Railway** line is owned by the county but leased to a private operator. The 30-mile line extends from the Rye yard to Chelatchie Prairie and offers both freight and passenger excursion services. The height of activity is between May and September when up to 16 excursion and 6 freight trains operate weekly. Freight cargo deliveries of plasterboard, plastics, chemicals, and machinery are made to local industries. In addition, special trips are made during the holiday season for Christmas trees.

**AMTRAK** has an agreement with BN to operate passenger service on the freight carrier's rail lines. AMTRAK operates passenger and parcel service 365 days a year throughout Clark County. Eight daily AMTRAK trains serve Vancouver. The *Pioneer* travels between Seattle and Chicago via Portland, Oregon, and Boise, Idaho; the *Coast Starlight* travels between Seattle and Los Angeles, via Portland,

Oregon; and the *Mount Rainier* travels between Seattle and Portland. An average of 3,000 passengers per month pass through the Clark County station. The overall condition of AMTRAK's facilities is good. In addition, a proposed high speed rail system (previously mentioned) would provide 150 mph or greater service between Portland, Oregon and Vancouver, BC.

**Union Pacific Railroad** operates some freight trains to Tacoma and Seattle on BN's lines. Union Pacific Railroad is privately owned and operates freight service 365 days a year. Twenty trains per day run north from Vancouver through Woodland and up to the Seattle area.

## ***PORT DISTRICTS***

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Clark County has three port districts: the Port of Vancouver, the Port of Camas-Washougal, and the Port of Ridgefield. Only the Port of Vancouver provides commercial waterborne shipping facilities.

The **Port of Vancouver** operates an international cargo dock used by over 350 ships annually, carrying over five million metric tons of cargo in 1990, 80 percent of which was grain. The Port is expanding its dry bulk handling facilities. The Port also has industrial property with 40 tenants and holds property in the Vancouver Lake Lowlands for future development of recreational facilities, a business park, industrial sites and expansion of its marine terminal operations.

The **Port of Ridgefield's** taxing district extends over 110 square miles of land. Port-owned assets include a 78-acre industrial park located near the I-5/269th interchange and NW Timmons Road. The land is zoned for light industrial use and currently houses six businesses. The Port also holds 4,615 acres of the Ridgefield Wildlife Refuge and parcels of land within the Ridgefield city limits totaling less than five acres.

The **Port of Camas/Washougal's** taxing district extends over 95 square miles of land with an industrial park, marina, airport, park and wildlife refuge. The 430-acre industrial park, located south of SR-14 by Index and 27th to 32nd Streets, has 25 industries, each of which employs between one and 164 people. The marina has moorage to accommodate 330 boats plus 25 additional slips for guests, a restaurant, two yacht clubs, and a boat

launch. The Port has an option to acquire and develop 82 acres of the Steigerwald Wildlife Refuge. South of the industrial park is Cottonwood Beach Park. The Port district also operates Grove Field Airport (described in the following section).

## ***AVIATION***

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Airports and air transportation services are provided in the context of a complex set of federal, state, and local governmental regulations, and each level of government has a certain degree of control over parts of the air transportation system. The Federal Aviation Administration (FAA), deals primarily with issues of safety and air traffic control. The Washington State Department of Transportation's Aeronautics Division currently focuses primarily on general aviation airports and has some direct involvement with major passenger airports. Local jurisdictions (either city, county, or port district) influence land use and usually are the airport operating authorities.

There are five airfields operating in Clark County. The *National Plan of Integrated Airport Systems (NPIAS)* and the *State Aeronautics Division* in the *Washington State Airport System Plan (WSASP)* categorize these airports as general aviation airports. Several additional private airfields are located throughout Clark County. Amphibian aircraft are allowed in the Columbia River and several area lakes. The *Resource Document* contains a description of each of the airfields in Clark County. Portland International Airport (PDX) is located in Portland, Oregon, to the southwest of the I-205 Glenn Jackson Bridge. This is a regional airport with domestic and international passenger and freight service. Passenger airlines serving PDX include American, United, Delta, TWA, Northwest, America West, Alaska, Horizon, Morris Air, Mark Air, Reno Air and Air BC.

An important example of an economic benefit that can be derived from airports is the ability to attract compatible land use developments (i.e., commercial or industrial) on or near airport property. In many instances, land immediately on or adjacent to an airport is flat, easily developed and relatively inexpensive when compared to more centrally located business district sites.

The Washington State Department of Transportation's Aviation Division, as well as local pilots' associations, have requested that an additional airport be sited in Clark County. In the late 1980's, a study was conducted to examine the feasibility of siting an airport in the Ridgefield Junction area. Public concern about the noise and traffic impacts of this airport resulted in not considering a new airport at that time.

Federal transportation planning legislation has brought intermodal planning to the forefront of national transportation planning. With this legislation there is an opportunity to channel funding to projects that improve access to general aviation airports, given that general aviation airports have been identified as an important intermodal link in the larger state and national transportation network.

One of the several requirements of the *GMA* is that the comprehensive plan of each jurisdiction should include a process for identifying and siting essential public facilities, including airports and state and regional transportation facilities.

The local planning authority and the airport sponsor should work together to ensure that the needs of both the local and aviation communities are met and compatible land uses are planned for the future. It is important for the countywide *20-Year Plan* to include the general aviation airports when planning long-term transportation improvements. .

A number of studies have been undertaken regarding airports, both specifically and generally in the last 20 years. An airport system plan was developed in 1984. Land use plans that incorporated airport issues were completed in 1979 (countywide) and in 1987 (*Ridgefield Subarea Plan*) and 1988 (*South County Subarea Plan*).

While these plans identified the location of existing airports on the *Comprehensive Plan* and recommended certain land use regulations be considered to protect the airport activities from being compromised, no county ordinances were specifically implemented. Applicable federal and state laws affecting land use around airports have been followed.

## ***BICYCLE AND PEDESTRIAN SYSTEM***

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The provision of bicycle facilities in Clark County is becoming increasingly important as relatively few bicycle facilities exist. No current data exists on the number of bicyclists on the road on a daily basis but the number is considered to be increasing based on interest in wanting such facilities and recreational surveys. Greater emphasis on physical well-being and the increasing awareness of the impacts associated with the automobile have made the bicycle more popular as an alternative mode of transportation. As the number of bicyclists in the community increases, the vulnerability of these riders also increases. Greater emphasis is being placed on the design of roadways for bicycles. Clark County and other local jurisdictions have included bicycle and pedestrian elements in other plan or their comprehensive plans.

In September 1993, Clark County officially adopted the *Trails and Bikeway System Plan*, a plan for developing new bicycle and pedestrian facilities throughout the county. The *System Plan* was developed primarily by the Parks and Recreation Division of the Department of Public Works, with cooperation of the Transportation Division, and in the revised road standards adopted by Clark County and all its cities. Clark County recently completed an analysis of the barriers to pedestrian and bicycle access to arterial streets. This analysis was used to develop the list of capital improvements needed to implement the *Comprehensive Plan*.

Bicycling is allowed on all state routes in Clark County except for a portion of I-5 between the Columbia River Bridge and slightly north of the Mill Plain Boulevard interchange. However, there is no guarantee of the suitability of roadway conditions or fitness of any route for bicycling. There are sidewalks on some sections of SR-500, SR-501, and SR-503. In addition, there is a short segment of pathway on SR-500 between Andresen Road and Thurston Way. There is also a pedestrian overpass of SR-500 at Falk Road. On these facilities pedestrians and bicyclists must use the same paths creating potential conflicts.

C-TRAN began a Bike and Bus program in May of 1994. Bike racks will initially be installed on six commuter bus routes including:

- Express via I-5;

- Camas-Washougal express;
- Battle Ground express;
- Evergreen express;
- Vancouver Mall limited; and
- Salmon Creek express.

In addition, the installation of bicycle lockers is planned for the Salmon Creek park-and-ride, and the Evergreen, Seventh Street, and Vancouver Mall transit centers in 1994.

Transportation policies are an extremely important component of the bicycle and pedestrian plan. It is more cost effective to incorporate the path at the time of initial construction if the roadway project policies provide the support and direction to plan and build facilities. The county currently has a Safe Walkways Task Force that has addressed transportation policy for the physically challenged by giving priority to those projects that serve the *American with Disabilities Act (ADA)* requirement, wheelchair accessible transit service, social and/or health offices, or provide for improvements to mobility, such as wheelchair curb ramps at intersections.

## ***TRANSPORTATION DEMAND MANAGEMENT (TDM)***

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### ***Commute Trip Reduction (CTR)***

The CTR law was passed as part of the *Clean Air Act* to ease traffic congestion, improve air quality and improve the general livability of communities. CTR is a statewide program asking employers to promote and facilitate the use of alternative modes to and from work. The CTR law focuses on work-related trips, where at least 100 employees travel to the work site in the morning peak traffic period. Trips made to and from the same location every day put the employer in a good position to market and promote a CTR program.

Where many programs demand rigorous physical system improvements with substantial financial commitments, the success of the CTR program is grounded instead in behavioral changes regarding the ways that people use transportation. Behavioral changes that individuals make to travel by carpool and vanpool, transit, bicycle, or foot can significantly affect conditions on the roadway and throughout the community, often

at a fraction of the cost of many of the other system improvements.

Behavioral changes, of course, do not occur overnight or in a vacuum. The public demands cost effectiveness and convenience in their daily travel patterns. Public outreach and education is critical to the successes of the CTR concepts. It is through this educational program that the public will become advocates for a better transportation system, supporting a more responsive system in both speech and action. The goal of the CTR law is to reduce commute trips by 35 percent by 1999; this effort can certainly play a significant role in increasing the area's livability. C-TRAN has been given the lead role in CTR programs.

The key to successfully reaching CTR goals is the development of the site specific TDR programs and implementation measures. Typical TDR measures to reduce congestion include:

- transportation demand management, transit information centers at worksites;
- preferential high occupancy vehicle parking;
- transit subsidies;
- parking charge;
- ride match service; and,
- provision of bike racks and facilities for bicyclists.

### ***Parking***

Parking policy, codes, and pricing have the most direct effect on commuting behavior and choice of modes for travel. Parking policy through the 1970s and into the 1980s concentrated on providing abundant off-street parking (both private and public) and closely monitoring available low cost on-street metered parking to attract business and encourage economic growth. While the parking programs today are much the same as they were 20 years ago in terms of attracting businesses, the means to this end are slightly different. Today, visions of mixed-use centers, higher density housing developments, and a pedestrian friendly environment are being incorporated

into the *20-Year Plan* elements. Although parking has always been a hotly contested issue, especially for those individuals desiring to drive to their destination, parking policies of the past are at odds with current goals.

Livable neighborhoods and pedestrian friendly environments are critical to the success of alternative transportation opportunities such as transit, carpooling, bicycling, walking and even light rail. Where walkable and transit friendly environments exist, the need for parking can actually decrease. The larger (in actual area) the transit friendly and walkable environment, the greater the potential decrease in parking demand. A decrease in parking can be realized only with a supporting and usable transit system, as well as pedestrian amenities. In the absence of such an environment, the demand for available parking will remain.

## ***LEVEL OF SERVICE (LOS)***

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### ***Roadways***

Level of service (LOS) standards represent the minimum performance level desired for transportation facilities and service within the region. They are used as a gauge for evaluating the quality of service on the transportation system and can be described by travel times, travel speeds, freedom to maneuver, traffic interruptions, comfort, convenience and safety. The *GMA* states that "level-of-service standards shall be established for all arterials and transit routes to serve as a gauge to judge the performance of the system." The *GMA* directs that these standards should be established locally and coordinated regionally for local arterials and for highways of regional significance. The standards are used to identify deficient facilities and services in the existing transportation system. Highways of statewide significance (RCW 47.06.140) have a level of service set by the state.

### ***LOS Definitions***

Level of Service standards can be based on a segment of a roadway or an intersection. The following tables describe level of service standards as defined by the Highway Capacity Manual: Special Report 209, Third Edition (Transportation Research Board, 1998).

## Highway Capacity Manual Definitions of LOS

**Table 3. Type I Urban Arterials, roadway segment average travel speed**

LOS CLASS	A	B	C	D	E	F
AVG TRAVEL SPEED (MPH)	≥42	≥34	≥27	≥21	≥16	< 16

**Table 3.5 Type II Urban Arterials, roadway segment average travel speed**

LOS CLASS	A	B	C	D	E	F
AVG TRAVEL SPEED (MPH)	≥35	≥28	≥22	≥17	≥13	< 13

**Table 3.6 Level of Service Criteria for Signalized Intersections**

LOS CLASS	A	B	C	D	E	F
CONTROL DELAY PER VEHICLE (SECONDS)	≤10	> 10 & ≤ 20	> 20 & ≤ 35	> 35 & ≤ 55	> 55 & ≤ 80	> 80

**Table 3.7 Level of Service Criteria for Unsignalized Intersections**

LOS CLASS	A	B	C	D	E	F
CONTROL DELAY PER VEHICLE (SECONDS)	≤10	> 10 & ≤ 15	> 15 & ≤ 25	> 25 & ≤ 35	> 35 & ≤ 50	> 50

### Clark County Level of Service Standards

Clark County level of service standards will be applied at both the corridor and intersection level of analysis. The concurrency ordinance will identify specific, designated arterial corridors. Levels of service on these corridors will be defined in the concurrency ordinance according to roadway type, location and function. Corridors will fit into one of four level of service categories, Type 1 Arterial level of service C, Type II Arterial level of service C, Type II Arterial level of service D, and Type II Arterial level of service E, as identified in the HCM and as presented above in the summary tables 3.4 and 3.5.

In addition, intersections within designated corridors will be subject to additional level of service standards so that a) for signalized intersections no individual movement at any intersection may exceed two cycle lengths or 240 seconds of delay, whichever is shorter, and b) for unsignalized intersections HCM level of service E is not exceeded. Intersections which exceed these standards may fail independent of the entire corridor.

Outside of designated corridors: c) all signalized intersections of regional significance may not exceed HCM level of service D, and no unsignalized intersection may go below HCM level of service E.

Levels of service on Highways of Statewide Significance will be set by the Washington State Department of Transportation. Level of service for Highways of Regional Significance

will be determined by the Southwest Washington Regional Transportation Council.

The unsignalized intersection LOS methodology is not used as a criteria to install signals. Unsignalized intersections must meet legal signal warrants (volume, safety, and operating criteria) before a signal can be installed. Indiscriminate installation of traffic signals can actually increase accidents as well as add unnecessary expense. The application of unsignalized intersection analysis will be addressed in detail in the Transportation Impact Analysis ordinance.

The result of the *Partnership Planning* program was to recommend a county wide roadway LOS system with a hierarchical standard in the rural area and in the Vancouver urban area. A countywide system will allow consistency throughout the region, and also permit a smoother transition during annexations. Three alternative PM peak hour LOS scenarios were analyzed to measure the effects on a 2013 travel demand forecast. The PM peak hour is used for analysis because it is typically the highest hourly volume in a 24-hour period. Deficient roadways are defined as those links or intersections that exceed the adopted LOS standard. Therefore, the adopted LOS standard will determine the current and future improvements projects in the transportation plan. The roadway LOS standard must reflect a reasonable balance between the amount of improvements the county and its cities can



afford and the amount of congestion the public can tolerate. The *GMA* requires that each jurisdiction demonstrate that they can pay for proposed improvement projects from reasonably available funding sources. Proposed roadway LOS standards for Clark County and its cities are presented in *Table 3.5*. The intent of the proposed standards is to differentiate LOS standards for urban areas and urban centers. The purpose of this is to more accurately reflect and support land use plans that allow for increased density for urban centers. LOS standards will be lower for urban centers, which will encourage higher densities and increased transit and high occupancy vehicle use. The transportation capital facilities plan is a direct function of the above defined level of service standards and the projected population and job growth. The capital facilities plan will be comprised of projects necessary to maintain the defined standards through 20 years of growth.

## ***CONCURRENCY***

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### ***Concurrency Requirements***

The concurrency requirement of the *GMA* mandates that local jurisdictions adopt and enforce ordinances that prohibit development approval if the development causes the LOS on certain transportation facilities to decline below the standards adopted under the auspices of this comprehensive plan, unless transportation improvements or strategies to accommodate impacts of the development are made concurrent with the development. Concurrent with development means that improvements or strategies are in place at the time of development, or that a financial commitment is in place to complete the improvements or strategies within six years. Clark County will meet these requirements through the adopted concurrency ordinance.

Concurrency policies will be applied to local arterials identified in the capital facilities plan and to highways of regional significance (state-owned facilities not designated as highways of statewide significance). State highways of statewide significance are exempt from local policies.

The concurrency requirements of the *GMA* closely match the *State Environmental Policy Act (SEPA)* short-term impact analysis requirements as they both evaluate transportation impacts (namely the roadway

and intersection LOS) at the year of opening of the development or a specified short-term analysis year. A *State Environmental Policy Act (SEPA)* transportation impact analysis would specify a study area. Concurrency requires an evaluation of area-wide impacts and specific mitigation of those impacts concurrent with the development opening.

### ***Concurrency Management System***

The concurrency management system must address concurrency monitoring and concurrency regulation for new development. The county and its cities are responsible for concurrency monitoring and the project applicant is responsible for demonstrating concurrency of the proposed development. The concurrency management system will include all designated corridors along identified arterials and their intersections on the regional system, except for facilities of statewide significance or intersections with facilities of statewide significance. In addition, all intersections of regional significance will also be subject to concurrency testing.

Concurrency Monitoring Implementation of concurrency monitoring in the county and with local jurisdictions will consist of the following strategies:

- LOS will be monitored and a database established, that includes all intersections within the concurrency management system. Traffic counts will be updated every three years. Estimates will be prepared for other years.
- The regional model will be used to estimate LOS for roadway segments. A regular traffic data collection program will be established for roadway segments.
- A tracking system will be created for development applications to account for "used capacity." Reserved capacity for new development will be based on approved applications.
- An annual concurrency report will be prepared.

## ***GOALS AND POLICIES***

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Transportation policies that seek to provide for the mobility of people and goods must consider

increases in travel demand caused by growth in population and employment. The transportation system must be affordable and minimize environmental impacts to maintain the quality of life. A safe, efficient transportation system can work to enhance economic development within a region in conjunction with supportive land use plans.

### ***Community Framework Plan***

The *Community Framework Plan* and the comprehensive plans of the county and its cities envision a shift in emphasis from a transportation system based on private, single-occupant vehicles to one based on alternative, higher-occupancy travel modes such as ridesharing, public transit, and non-polluting alternatives such as walking, bicycling, and telecommuting. This shift occurred due to changes in funding constraints at the federal and state level as well as consideration of the thirteen *GMA* planning goals contained in *36.70A.020 RCW*.

Regional policies are applicable countywide. Urban policies only apply to areas within adopted urban growth boundaries (UGBs) and are supplemental to any city policies. Rural policies apply to all areas outside adopted UGBs.

### ***Regional Implementation Policies***

***GOAL 3.1: Develop the existing transportation infrastructure into an efficient multi-modal transportation system.***

#### ***Policies:***

#### **System Development**

- 3.1.1 Adopt LOS standards for the regional arterial system and transit routes that direct growth to adopted urban and rural centers.
- 3.1.2 Avoid adding lanes to arterial roadways which currently have inappropriate levels of land access, as defined in the County Road Standards, by developing improvements to adjacent corridors to limit traffic through neighborhoods.
- 3.1.3 Pursue acquiring right-of-way for planned transportation improvements.
- 3.1.4 Establish and promote scenic highway corridors.

- 3.1.5 Improve the efficiency of the county's transportation system through the use of Transportation System Management strategies such as signal interconnect systems, signal coordination and synchronization, and other signal improvements where appropriate.
- 3.1.6 The regional public transportation system shall serve the needs of with transportation disadvantages in accordance with adopted service standards.
- 3.1.7 Transportation plans of Clark County and local jurisdictions should be coordinated to address countywide economic development goals, policies and strategies.
- 3.1.8 Pursue transit related options, including high capacity transit, to reduce congestion and to improve and maintain air quality.
- 3.1.9 Support new and/or improved passenger rail transportation services between Clark County and the Portland metropolitan area, and along the I-5 corridor from Vancouver, BC to Eugene, Oregon.
- 3.1.10 Ensure that necessary public facilities and services to maintain adopted level of service standards are available when the impacts of development occur.
- 3.1.11 When County Road Projects are designed or transportation improvements are proposed through the development review process, the design of those transportation facilities shall be consistent with the *1995 Arterial Atlas and Concurrency Management System* dated January 1996 as hereafter amended.
- 3.1.12 The capital facilities plans, concurrency strategies, and impact fee programs within each UGA should be jointly undertaken with the city and reviewed for regional consistency by the Southwest Washington Regional Transportation Council.

***GOAL 3.2: Develop a balanced finance program which ensures that new development pays the cost of its impacts and that adequate public financing is available.***

## ***Policies:***

### **Finance**

- 3.2.1 Develop and implement a process that ensures efficient management of transportation resources through cooperation in long range planning and project development by federal, state, regional and local jurisdictions.
- 3.2.2 Prohibit transportation improvements, regardless of the financing mechanisms, that would trigger premature development or development that is inconsistent with applicable 20-year plans and zoning and supporting infrastructure.
- 3.2.3 Cooperatively work with local municipalities to develop an integrated Transportation Improvement Program process to maximize the resources for the region.
- 3.2.4 Prepare interagency agreements that allow for intergovernmental development review, including the county, its cities and C-TRAN. Provisions for smooth transfer of project management and funding for transportation projects, including transfers of impact fees and funding during annexation should be prepared.
- 3.2.5 Develop jointly a process for setting priorities for programming and financing transportation improvements that reflect adopted transportation policy emphasizing alternatives to the single occupant vehicle. The process should be flexible to allow staff to maximize use of outside resources, such as the Transportation Improvement Board.
- 3.2.6 Pursue all existing funding sources and develop new sources to aid in the programming of multimodal transportation systems and commute trip reduction efforts. Federal and state funding sources shall be jointly pursued with other jurisdictions to increase the opportunity for grant awards.
- 3.2.7 Traffic impact fees shall be imposed on new development. Traffic impact fee overlay districts may be created in accordance with the policies set forth herein without amendment to the *Comprehensive Plan* (or *Capital Facilities Plan*).

- 3.2.8 For purposes of calculating traffic impact fees, the county shall use the project list contained in the *Transportation Capital Facilities Plan*.

**GOAL 3.3: *Provide seamless interconnections among travel modes to facilitate the mobility of people, goods, and services.***

## ***Policies:***

### **Alternative Modes**

- 3.3.1 Emphasize transit and ridesharing in the design and construction of all transportation facilities through the implementation of transportation system management techniques (signal timing, signal preemption) and transit only and high occupancy vehicle lanes.
- 3.3.2 Establish residential, commercial, and industrial development standards, including road and parking standards, to support the use of alternative transportation modes.
- 3.3.3 Encourage expansion of transit and other multimodal travel strategies over capital expenditures for roadway improvement intended to increase capacity for single occupancy vehicles, except where safety issues can only be resolved through roadway improvements.

### ***Bicycle & Pedestrian***

- 3.3.4 Encourage the development of bike paths, trails and pedestrian connections both as recreational amenities and as alternatives to auto travel in and near major industrial and commercial centers.
- 3.3.5 Annually dedicate a portion of road funds, above the minimum required by state law, to sidewalk and bicycle facilities. Priority shall be given to sidewalk construction projects in transit corridors and major activity centers.
- 3.3.6 Priority shall be given to right-of-way acquisition for the non-motorized routes recommended in the *Clark County Trails and Bikeway System Plan*, December 1992. Developer contributions should be required where appropriate.

- 3.3.7 A street maintenance program shall be developed by the county for non-motorized transportation including interagency agreements on sharing services as needed to ensure that all shoulders and/or designated bike lanes are maintained in a safe condition.
- 3.3.8 On-street bicycle/pedestrian facilities shall be incorporated into roadway improvement plans.

### ***Transit***

- 3.3.9 State and bi-state planning efforts that develop and improve existing passenger rail transport in the Portland-Vancouver metropolitan area and the Northwest shall be supported.
- 3.3.10 The regional public transit system shall be integrated with other modes of transportation including auto, rideshare, bicycle, and pedestrian travel with intercity bus, rail, and airline facilities.
- 3.3.11 Long range land use and transportation plans shall be coordinated with high capacity transit plans.
- 3.3.12 Public transportation services and facilities shall be improved to meet the requirements of the *Americans with Disabilities Act*.

### ***Intermodal***

- 3.3.13 Assure continued maintenance and improvement of competitive multimodal and intermodal freight transportation networks offering convenient cost-effective access to highway, rail, marine and air freight services for business and industry.
- 3.3.14 Encourage grade separations between rail and other modes of transportation where possible while improving intermodal connectivity at transfer points.
- 3.3.15 LOS standards shall be maintained by the appropriate jurisdictions on major freight mobility corridors and in the vicinity of major intermodal facilities to ensure the economic vitality of the region.
- 3.3.16 Improve major freight mobility corridors to limit freight movement through residential areas.

- 3.3.17 Truck access shall be restricted where gross weight will adversely impact the structural integrity of streets.

### ***Aviation***

- 3.3.18 Regional airport planning shall include all affected jurisdictions to provide compatibility with surrounding land uses and to support adequate ground transportation to move people and goods to and from airports.
- 3.3.19 The county shall participate in any new site selection process led by the Washington State Department of Transportation Aviation Division.
- 3.3.20 Undertake the following actions during the site selection process in *Policy 3.3.19* or when considering the application of airport and airport zoning for existing or new private, public use airports:
- Initiate a Clark County Aviation Board or Advisory Committee, and include in its membership representatives of the airport owners and operators, the Washington Pilots Association, jurisdictional representatives, citizen representatives, and possibly business interests, such as the Chamber of Commerce and/or the Columbia River Economic Development Council;
  - adopt Overlay zones to provide levels of protection from incompatible uses based on the type of airport and the degree of encroachment around it;
  - inventory all public, quasi-public, and private airports and airparks in Clark County and surrounding counties, and existing demand;
  - analyze public ownership of privately owned airports;
  - investigate current and planned land uses surrounding the airports, noise corridors, clear zones, and buffers to determine whether airport protection zones for these airports are in the public interest and should be imposed on and around the airport. An airport protection zone shall be applied to all future airport environs at the time the Airport zoning district is applied to specific property;

- f. develop forecasts of general aviation demand over the next 20 years;
- g. compare general aviation capacity with projected general aviation demand to determine potential deficiencies; and,
- h. examine economic, social and environmental impacts of addressing identified potential deficiencies.

### ***Transportation Demand Management***

- 3.3.21 Encourage the development of TDM programs through voluntary implementation of the CTR ordinance and trip based reductions in traffic impact fees for specific demand management measures. Any such reductions shall not be deemed exemptions from traffic impact fees (TIFs).
- 3.3.22 Encourage reduction of single occupancy vehicle reliance in order to improve air quality by reducing vehicle exhaust emissions through alternatives to the single occupancy vehicle, use of cleaner fuels, and improving the operating efficiency of the transportation system.

***GOAL 3.4: Provide viable travel alternatives to the single occupant vehicle and reduce single occupant vehicle demand.***

#### ***Policies:***

#### **Road Standards**

- 3.4.1 Coordinate with local municipalities, the Washington State Department of Transportation, adjacent counties and C-TRAN to ensure that minimum roadway and multimodal design standards are consistent and that the design standards provide for all modes and are compatible with adjacent land uses.
- 3.4.2 Development projects shall be required to adhere to minimum access spacing standards for arterials (as set forth in *Clark County Code, §12.05: Road Standards*) to preserve the capacity of the arterial system. The county shall also work with the state to ensure that

minimum access spacing standards for state highways are maintained.

- 3.4.3 Encourage private developments to access through collector and local access streets, versus direct access to the arterials, and encourage consolidation of access in developing commercial and high density residential areas through shared use driveways and local access streets that intersect with arterials.

***GOAL 3.5: Provide a transportation infrastructure which is able to meet continued growth in travel demand by providing alternative travel.***

#### ***Policies:***

#### **Land Use/Transportation**

- 3.5.1 Within the UGAs, jurisdictions shall encourage growth: 1) in centers and urbanized areas with existing infrastructure capacity; 2) in areas that are already urbanized where infrastructure improvements can be easily extended; and 3) in areas requiring major infrastructure improvements.
- 3.5.2 Encourage high density employment centers (of 20 or more employees per acre, as practicable) to be located in urban centers served by high capacity transit.
- 3.5.3 The relationship between land use and public transportation shall be supported by requiring development along designated transit corridors, nodes and near commercial centers to have increased densities and intensities supportive of transit corridors.
- 3.5.4 Provide development incentives (such as increased density, square footage, and/or height) within designated UGBs when additional amenities for transit users, bicyclists and pedestrians are included in the development.
- 3.5.5 Insure that proposed capacity improvements to the transportation systems are designed to serve proposals that are contiguous to existing development as a means to encourage the in-fill of existing urban development patterns.
- 3.5.6 Encourage the use of traffic calming devices within neighborhoods.

## **System Development**

- 3.5.7 The county, C-TRAN and local agencies shall improve and/or expand specialized transportation services and facilities to meet the requirements of the *Americans with Disabilities Act*. The county and local municipalities shall incorporate into the development and project review process, for private and public projects, adequate checklists to ensure that accessibility for the elderly and disabled is provided, through the construction of curb cuts and ramps, designation of parking spaces, etc., as specified by local, state, and federal laws, regulations, and standards.
- 3.5.8 The county shall work toward reducing the environmental impacts of impervious surfaces, by providing options to design standards and surfaces that reduce total surface runoff.
- 3.5.9 Support public and private development proposals to enhance the roadway edge, to maximize comfort and minimize distances for transit users and pedestrians to these developments.
- 3.5.10 Multimodal industrial development in the Port of Vancouver shall be supported.

## **Alternative Modes**

- 3.5.11 Implement subdivision and commercial/retail development standards that require new development to facilitate cost-effective transit and emergency service by minimizing travel distances and supporting connecting roadways.
- 3.5.12 Ensure that alternative transportation modes are included in subdivisions and other land developments.
- 3.5.13 Roadway improvements included in the *20-Year Improvement Plan*, which provide for additional capacity for the automobile, shall also include design accommodations for alternative travel modes.
- 3.5.14 Coordinate with C-TRAN to integrate transit facilities such as transfer centers, bus pullouts, bus shelters, transit information centers and pedestrian connections into the design of all types of development.

## **Bicycle & Pedestrian**

- 3.5.15 Discourage the construction of cul-de-sac and other forms of dead-end streets especially those without pedestrian and bicycle linkages. Existing unconnected streets should be retrofitted to provide bicycle and pedestrian linkages.
- 3.5.16 Coordinate with C-TRAN to provide secure bicycle storage facilities at park-and-ride lots and other transit facilities and allow riders to transport bicycles on public transit vehicles.
- 3.5.17 All roadway projects shall meet adopted facility standards for safe and convenient bicycle and pedestrian travel, including protected bicycle parking at activity centers such as commercial areas, institutions, parking garages, park-and-ride facilities and transit terminals.
- 3.5.18 Bicycle and pedestrian facilities shall be included in all developments to provide connections to adjacent property and transportation facilities (such as roads, trails, and transit routes) to facilitate safe and convenient access.

## **Parking**

- 3.5.19 Review current zoning codes, in particular for commercial and office use, as part of a parking management plan.
- 3.5.20 Encourage the use of common and shared parking facilities among compatible adjacent land uses.
- 3.5.21 Assess the need and location for new or expanded park-and-ride and carpool lots and examine the need for fringe area parking facilities to serve cross-town transit routes.

**GOAL 3.6: *Provide for an adequate rural transportation infrastructure at or near true cost to facilitate densities in the urban areas.***

## **Policies:**

### **Rural Implementation Policies**

- 3.6.1 Strong connections of the arterial system to the regional transportation system with adequate rural arterial connections to major multimodal transportation corridors and park-and-ride facilities should be provided.

- 3.6.2 Minor collector arterial service shall be provided to rural cities, towns, and centers to serve commercial markets in these areas and accommodate alternative transportation.
- 3.6.3 Support ongoing public transportation connections to the rural centers and encourage express service between rural cities, towns and centers and urban centers.
- 3.6.4 A safe and secure walkway network shall be established within towns and rural centers that emphasizes non-motorized access to the town center. Towns and rural centers should be developed so that they are accessible by the countywide *Trail and Bikeway System Plan*.
- 3.6.5 Pursue implementation of a rural traffic impact fee system.

## ***STRATEGIES AND IMPLEMENTATIONS***

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### ***Freight***

- Identify two-lane highway segments that experience capacity and safety deficiencies related to steep grades.
- Facilitate improvements at truck weigh stations that will reduce delay. These improvements should be focused on improving existing facilities that will prevent back-up of trucks awaiting processing.
- Reduce accident response time to accidents occurring on the highway/freeway system. Efficient, coordinated operation between state patrol, emergency medical specialists, and vehicle removal will help minimize the length of delay and congestion on the affected routes. The implementation of overhead variable message signs would help warn drivers of the delay and choose alternative routes.
- Develop a comprehensive inventory of existing signing and identify improvements to signing truck routes. the inventory should be updated periodically.

### ***Aviation***

- Identify all public use airports under the land use jurisdiction of Clark County and evaluate the existing land uses and zoning for one mile around each airport. Determine where future residential, educational facilities and hospitals might be permitted under current and proposed zoning within areas subject to aircraft noise or accidents.
- Evaluate existing local and countywide public use airport plans, land use plans and local, state and federal land use regulations and determine how they apply to each of the public use airports under the land use jurisdiction of Clark County.
- Conduct a review of standards in other jurisdictions in the Portland Metropolitan area and, if necessary, similar sized jurisdictions in Washington State, for example, that address identified concerns. Kelso and Troutdale airfields are two examples.

## ***CONCURRENCY STRATEGIES***

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- Implementation of a concurrency regulation within the county and its municipalities will consist of the following strategies:
- The LOS will be measured for all designated corridors and at intersections of regional significance (at least three approaches on federally classified as arterials). The LOS will be measured over a one-hour period, using the AM or PM peak (whichever is higher), except in the rural area, where the highest consecutive one-hour volume period (regardless of time of day) will be used.
- Concurrency will be determined based on available capacity or capacity that is reasonably funded to be added to the system within a six-year period. Reasonably funded projects will include those programmed in the appropriate jurisdiction's six-year transportation improvement program using non-grant funding, or those programmed in the transportation improvement program

which have received grant approval. Projects programmed to receive grants that have not yet received grant approval will not be considered as reasonably funded, unless the programming occurs within the first three years of the region's transportation improvement program and uses directly allocated (formula) funding.

- Development will be determined to be concurrent with reasonably funded transportation capacity if the existing transportation demand, plus the additional projected demand due to other approved but as yet unoccupied developments, plus the demand created by the site being reviewed, falls within LOS standards.
- Jurisdiction will have six years from adoption of this system to correct existing deficiencies. "Correction" in this sense means that projects to correct existing deficiencies must be reasonably funded in succeeding local and/or regional TIPs and completed within the six-year period.
- Development that creates a deficiency will be required to mitigate that deficiency, at their expense, unless the project which will correct that deficiency is reasonably funded in the jurisdiction's six-year transportation improvement program, whereupon the developer may be required to fund a proportionate share of that project.
- Transportation impact analysis guidelines will be developed and adopted that incorporate the concurrency strategies listed above and are also applicable to the SEPA process. This will ensure that development applicants only conduct one traffic study.
- Localized impacts of new development, such as impacts on non-arterials in the proximity of the new development or on safety, should be addressed via *Transportation Impact Studies* as required by the reviewing jurisdiction. Guidelines for these studies will be included in Clark County's new *Road Standards*.

- Intergovernmental agreements are needed to coordinate the development review process where transportation impacts generated by a development in one jurisdiction affect another jurisdiction. These agreements will be an element of the overall intergovernmental agreements governing development review. The *Concurrency Management System* shall be consistent with respective urban growth areas.
- Interagency agreements will be implemented that allow for intergovernmental development review procedures, as well as for smooth transfer of project management and funding, including transfers of impact fees during annexation.
- Procedures will be established for developments that do not meet concurrency requirements that could consist of: 1) development denial, 2) development modification, and 3) LOS mitigation.

## ***FINANCIAL ANALYSIS***

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A financial analysis was prepared for the *Transportation Element* to demonstrate concurrence for the planned roadway improvements and ability of the county to fund those improvements. The *GMA* requires that there be a balance between proposed land use, resulting traffic forecasts and transportation improvements directed by the LOS standards and available revenues. The *GMA* requires that public facilities and infrastructure either be in place or included in a six-year improvement program before new development can be approved. The *GMA* also enables impact fees, which are used to finance the shortfall between revenue and the cost of the transportation plan. Clark County adopted an impact fee ordinance in September 1990.

The financial analysis consists of four parts:

- Review existing transportation funding sources and forecast revenues through 2000 (six-year horizon), based on existing trends.
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- Prepare estimated costs for transportation improvement projects.
- Compare revenue and expenditure projections, estimated capital improvement costs and identify potential shortfalls to fund any shortfall in funding the capital improvement program.

### ***Existing Revenue Sources***

Revenues available for financing roadway activities in the county and its cities can be highly variable, depending on the amount of development activity occurring in the county, the number of successful grant applications and other local economic factors. Funds for roadway-related activities come from four general sources:

- General county revenue (e.g., property tax)
- Local Improvement District bonds
- Impact Fees adopted by the BOCC in September 1990
- Distributions from state and federal sources (e.g., state gas tax allocations).

Funds allocated from general county and city revenues are distributed through the budgetary process. Though these funds are

highly dependent on general economic conditions, the budgetary process can soften the impact of fluctuation in the economy and stabilize the year-to-year variation in funds allocated to roadways.

Revenues derived from roadway-related activities and from outside sources usually do not have the benefit of the budgetary process. Budgetary decisions cannot smooth out fluctuations when these revenues are dedicated solely to public works activities by the nature of the fee or by the state and federal government. Impact fees are contingent upon project and development activity. Funds from state and federal sources are restricted by their own budgetary limitation of those jurisdictions. Funds for individual modes have traditionally been allocated by individual agencies; however federal funding sources now allows some flexibility in funds between roadways, transit, and non-motorized modes.

The variability of the budgetary process, local economic conditions and federal and state sources often cause individual revenue sources to fluctuate widely from year to year. This creates difficulty in tracking definable trends in revenue growth from these sources. Total revenue dedicated to road activities rises and falls with the fluctuation of individual sources, though the amplitude is buffered as some sources fall and others rise, absorbing some of the impact of each.

### ***Revenue Forecast***

The revenue forecast for road capital facilities is based on historic trends for several revenue sources including road fund property tax, road fund gas tax, TIF revenues, and annual grant

funding. The revenue forecast document, which outlines the assumptions used to develop the forecast is included in the Capital Facilities Plan. *Table 3.8* presents revenue forecasts.

**Table 3.8 20-Year Projection of Capital Revenues and Expenditures**

	Year 2000 Dollars
REVENUE	\$287,471,419
EXPENDITURE	\$218,904,400
BALANCE*	\$68,567,019

\*The identified balance, or surplus, are local monies that will be used to match state funds for improvements to the state system within Clark County.

### ***Projected Expenditures***

Long-range capital improvements to the county's transportation system and their

estimated costs are included in the Capital Facilities Plan. These projects would likely be funded through a combination of state sources, the Transportation Improvement Board, and a local match. Local contributions can raise the

likelihood of project funding, and typical (although not average) local matches are 20 percent. Note that in order to meet LOS standards and build new roadways consistent with the plan, many of the local streets must be built entirely by developer contributions, typically through formation of a local improvement district.

### ***Comparison of Need and Revenues***

The summary presented above addresses the revenues required to maintain level of service on local facilities. Improvements to highways of regional significance are addressed in the Metropolitan Transportation Improvement Program reviewed biannually by the Regional Transportation Council and are financially constrained. Improvements to highways of statewide significance are detailed in the Washington State Department of Transportation Highway System Plan which includes a description of both financially constrained and unconstrained planned improvements. Both documents, the regional MTP and the State Highway System Plan are incorporated herein by reference. The needs identified on the local system are consistent with the financially constrained portions of both the state and regional plans, as identified in the Capital Facilities Plan.

